REMARKS

Claims 1-22 and 24 are pending with claim 23 being canceled.

Applicants appreciate Examiner Griffin's time and courtesy during the telephone conference of January 8, 2004, with applicants' representative James E. Ruland. No exhibit was shown or demonstration conducted, claims 1, 23 and 24 were discussed, amendments were proposed to claims 1, 23 and 24. The amendments to claims 23 and 24 are depicted above. With respect to claim 1, it was proposed deleting the last four words of claim 1 and inserting therefore, "the improvement consisting of using in the first step a quantity of catalyst of about 5% to about 40% by weight of the total quantity of catalyst used in the process so as to minimize hydrogen consumption." Applicants have declined to make this amendment at this time.

A summary of the interview is included below.

Arguments

Claim Objections, Claim Rejection Under 35 U.S.C. § 112, Second Paragraph and Claim Amendments

Applicants have canceled claim 23 to remove the objection and claim rejection, and have amended claim 24 to obviate the claim objection. Applicants have also inserted a term in claim 7 to further conform the language of this phrase to Markush terminology. Applicants respectfully submit that these amendments to claims 7 and 24 do not narrow the scope of the claims because they merely make explicit what is inherent.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-3, 5-8, 10 and 15-24 stand rejected as allegedly being unpatentable over WO 96/17903 (WO). Applicants respectfully traverse these rejections.

WO fails to provide sufficient guideposts or blazemarks for one of skill in the art to use about 5 to about 40% by weight of the total quantity of catalyst in the first step. Rather, WO discloses that catalysts used for hydrogen desulphurization are usually also capable of effecting some hydrogenation of aromatic compounds provided the hydrogen sulphide level is very low. See page 13, lines 5-8 of WO. With this teaching, one of skill in the art would be lead to maximize the catalyst volume in the first step, so as to maximize hydrotreatment with conditions under high hydrogen sulphide levels, allowing for desulphurization under conditions where hydrogenation is inhibited. In addition, referring to Examples 6-8 and 15-17, one of skill in the art reviewing WO would be motivated to use a 50:50 ratio of catalyst between two hydrotreatment zones as discussed in applicants' reply filed July 29, 2003, which is hereby incorporated by reference.

In addition, in response to applicants' last reply, the action asserts that WO clearly discloses at the last three lines of page 19 and the first four lines of page 20 that hydrogen consumption is kept within acceptable limits, and suggests, that the hydrogen consumption is minimized.

WO discloses at page 19, line 32 – page 20, line 4 that the temperature rise in hydrogen consumption across the second hydrotreatment zone can readily be kept within acceptable limits. It is silent about keeping the hydrogen consumption of the entire process within acceptable limits. Moreover, WO discloses at page 24, line 30-page 25, line 2 that:

> In the process of the invention there will be used an amount of make up hydrogen which is equivalent to at least the stoichiometric amount of hydrogen required to desulphurise the feedstock and to achieve the desired

degree of dearomatisation. Normally it will be preferred to use at least about
1.05 times such stoichiometric amount of hydrogen.

(Emphasis added)

Consequently, rather than providing a limit to hydrogen consumption, WO only
teaches the need to add make up hydrogen and discloses a preferred range for the amount of
make up hydrogen. WO provides no indication how hydrogen consumption can be
minimized.

Moreover, one skilled in the art in possession of the teachings of WO would not
appreciate that hydrogen consumption can be controlled to a great extent due to the demands
of desulfurization. Vigorous desulfurization, i.e., chemical desulfurization reactions, leads
directly to a certain hydrogen consumption. One of ordinary skill in the art knows that some
hydrogen needs to be consumed to reach a given desulfurization level, and further knows that
additional hydrogen is necessarily consumed through aromatics' saturation. Thus, it is well
known that, when considering a given final sulfur target, the hydrogen consumption is linked
to the balance between hydrodesulphurization and hydrodearomatization. To reach a low
hydrogen consumption, one needs to minimize hydrodearomatization versus
hydrodesulphurization.

Thus, for a given final sulfur level, the only way to lower the hydrogen consumption
is to modify the balance between hydrodesulphurization and hydrodearomatization.

Prior to the invention, it was known that catalyst selection is a major tool for reaching
this target, and other tools could include affecting the reaction condition, such as adjusting
the hydrogen partial pressure and temperature.

But using a particular catalyst load distribution between a first and a second
hydrotreatment zone, as a parameter to minimize overall hydrogen consumption is
unexpected, and thus inventive.

Consequently, applicants respectfully submit that there is sufficient legal authority for the Examiner to withdraw these rejections.

In view of the above, favorable reconsideration is courteously requested. If there are any remaining issues which can be expedited by a telephone conference, the examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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